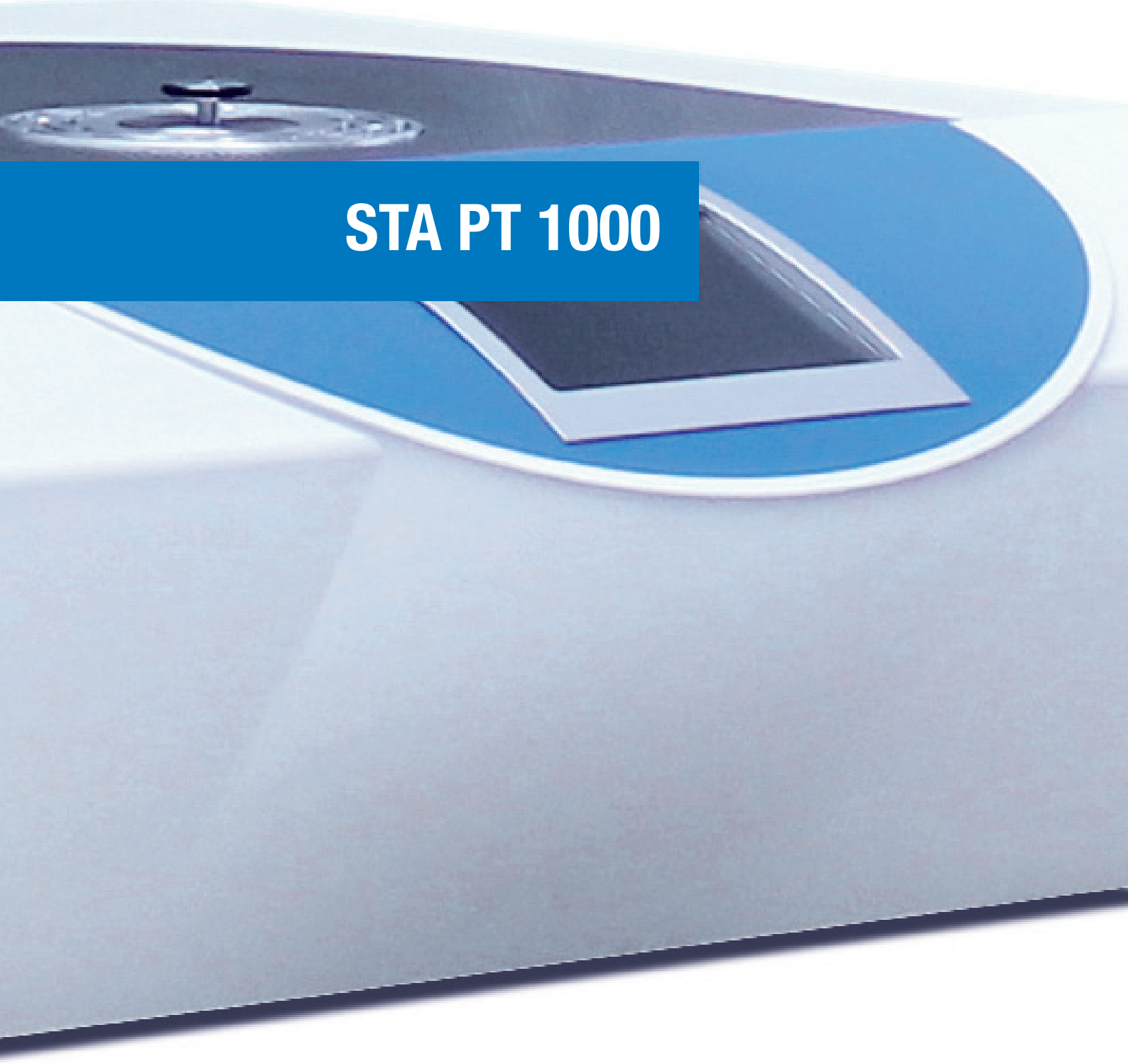
STA PT 1000



LINSEIS

General

Technical specifications

The LINSEIS STA PT1000 is a top loading Thermobalance, which offers a highly user-friendly design. Even at a sample weight of up to 10g the Tare is done electronically. The specially designed furnaces allow fast heating and cooling rates as well as a highly precise temperature control. Exchanging the different TGA, DTA or DSC measuring systems is only a question of minutes.

The STA PT 1000 and STA PT1000 HiRes combine both, the sensitivity of a Thermobalance and true Differential Scanning Calorimeter. Several different TG, TG-DTA and TG-DSC sample holders can be used to determine different reaction, transition temperatures, enthalpies and specific heat. As a result, the system can be adjusted for any type of application.

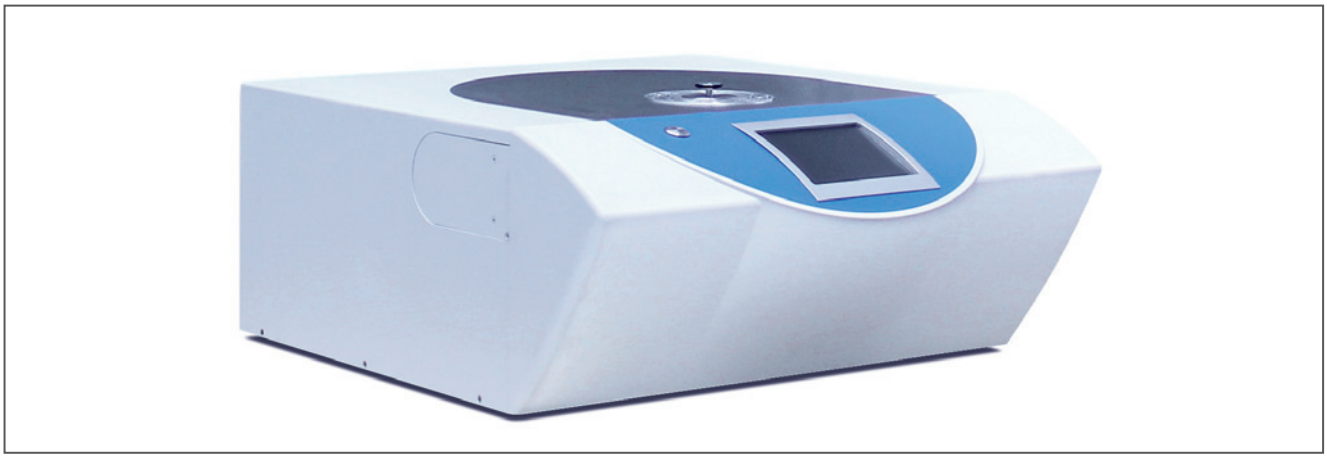
Static and dynamic atmospheres are possible due to the vacuum tight design of the instrument. Optionally a gas control box and a vacuum pump can be connected.

Applications

- Oxidative/Thermal Stability of Materials
- Composition of Multi-component Systems
- Estimated Lifetime of Products
- Decomposition Kinetics of Materials
- The Effect of Reactive Atmospheres on Materials
- Moisture and Volatiles Content of Materials
- Transition Temperatures
- Heats of Fusion and Reactions
- Melting and Boiling Points

Features

- Highest precision TG/DTA/DSC
- Highest resolution
- Drift stability
- Exchangeable measuring systems TG-DTA/DSC
- Different sensor Types E/K/S/B for highest precision measurements at any temperature
- Evolved gas analysis (MS/FTIR) possible
- True DSC sensor for Enthalpy & Specific Heat
- User friendly Software



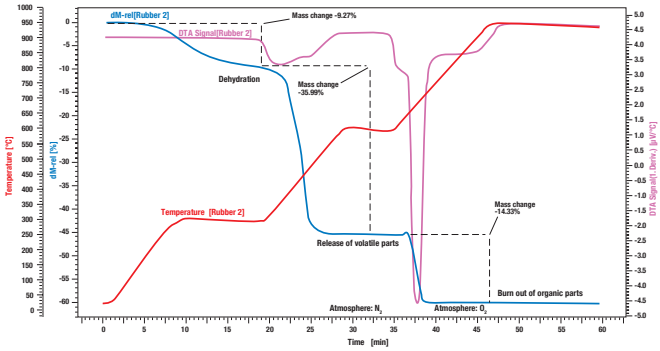
Technical specifications

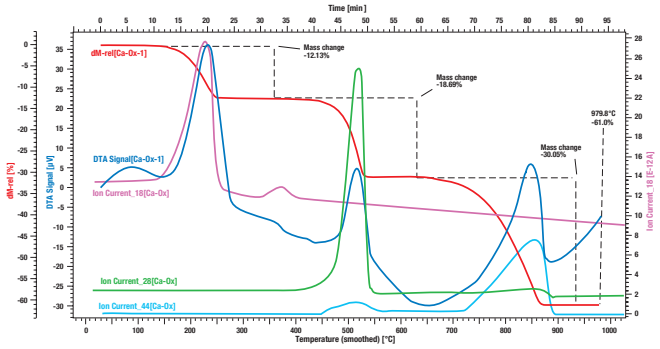
	STA PT 1000	STA PT 1000 Hi Res
Temperature range	RT up to 1000°C	RT up to 1000°C
Sample Mass	25 g	5 g
Resolution	0.5 µg	0.1 µg
Measuring system	E/K/S	E/K/S
Vacuum	10 E^{-2} mbar	10 E^{-2} mbar
Sample carriers	TG – DTA/DSC	TG – DTA/DSC
DSC measuring system	E/K/S	E/K/S

Applications

Decomposition of rubber

In the first step of weight loss, the dehydration of the sample takes place. The amount of water was 9.27%. In the second reaction step, the volatile components are released by pyrolysis under N_2 atmosphere. The amount of these components is 35.99%. For the third reaction step, the atmosphere is changed to O_2 – all organic components are burned out. The loss in weight is 14.33%. The remaining rest of 40.41% are inorganic components like ashes, slake or fillers.



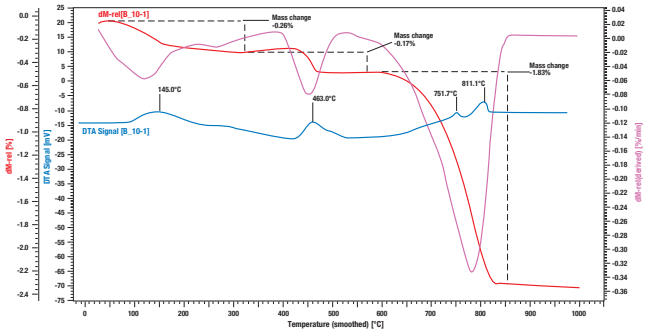


Decomposition of calcium oxalate monohydrate CaC_2O_4 under argon atmosphere

The evolved gases from the decomposition of calcium oxalate have been fed into the Mass Spectrometer with a heated capillary. The ion currents for mass numbers 18 (water), 28 (carbon monoxide) and 44 (carbon dioxide) have been imported into the graph.

Cement

The main parts of cement are tri calcium silicate, di calcium silicate and tri calcium aluminates. After putting on the cement with water different hydrates slowly form. The absorbed water evaporates first, then hydrates of the calcium silicate decompose and at 570°C the hydroxides of calcium, magnesium and aluminum follow. Subsequently, calcium carbonate CO_2 splits off.



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11/16

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